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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,293

11/18/2005

Rolf Muller

05-621

8643

34704 7590 10/01/2007  
BACHMAN & LAPOINTE, P.C.  
900 CHAPEL STREET  
SUITE 1201  
NEW HAVEN, CT 06510

EXAMINER

MESH, GENNADIY

ART UNIT

PAPER NUMBER

1711

MAIL DATE

DELIVERY MODE

10/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/553,293

Applicant(s)

MULLER ET AL.

Examiner

Gennadiy Mesh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-41 and 43-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-41 and 43-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed on September 18, 2007 is acknowledged.

Rejection is maintained as it was set forth in previous Office Action mailed on April 18, 2007.

### ***Claim Rejections - 35 USC § 102***

1. Claims 13 – 29, 34-37, 44-45 and 49-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Jialanella ( US 6,300,398).

Regarding Applicant's Claim 13 Jialanella discloses composition of a linear or substantially linear low density polyethylene and a wax, including low molecular weight polyethylene wax( see abstract, lines 10 –35 ,column 3 and line 20 –60,column 13).

Regarding Applicant's Claims 13 - 29: composition disclosed by Jialanella is being substantially same as Applicant's, will inherently have same physical properties including Modulus, Elongation at break, Stress Yield and Melt flow. Burden shifts to the Applicant to prove the contrary.

Regarding Claims 34 – 37 Jialanella discloses that polymers have polydispersity around 2 ( see Table V).

Regarding Claims 44 and 45 see lines 54- 60,column 13 and 18 – 30,column 13.

Regarding Claim 49 Jialanella discloses that composition was prepared using Haake mixer( see lines 55-65,column 23)

Regarding limitation of Claim 50 as " swelling agent" – Jialanella discloses that composition can comprise plasticizer( see lines 24-29,column 2).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 30 –33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella( US 6,300,398) as it applied to claims 13 – 29, 34-37,44-45 and 49 above, and further in view of Polywax Polyethylene ( Baker – Hughes web site publication).

Jialanella discloses composition ,wherein polymer has degree of long chain branches in a range from 0.01 – 3 per 1000, ( see line 40,column 3) which encompasses degree of branching claimed by Applicant for first polymer component P(i), but silent about branching degree of low molecular weight polyethylene wax. Thus implying that low molecular weight polyethylene wax with this property( degree of branching) is known in the art (and commercially available), is suitable for the invention disclosed by Jialanella with reasonable expectation of adequate results. Low molecular polyethylene wax with no branching, 100% linear, that will satisfy limitation claimed by Applicant in Claims 30 –33, disclosed by Baker –Hughes web site publication as being available for thirty years, incorporated herein as a reference.

Thus use of 100% liner low molecular weight polyethylene wax in invention claimed by Jialanella would have been obvious with reasonable expectation of success absent showing of unexpected results that can be clearly attribute to claimed degree of branching by Applicant.

3. Claims 38 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) as applied to claims 13 – 29, 34-37, 44-45 and 49 above, and in view of Kokko ( Metallocene-Catalyzed Ethene Polymerization: Long-Chain Branched Polyethylene, September 2002).

Jialanella discloses composition, wherein polymer has long chain branching, but silent about length of the branching chains( see line 40,column 3).

However, Kokko teach that short chain branches, less than 40 carbon atoms will interfere with formation of crystal structure of polyethylene ( see page 1,second paragraph) and when branch length increases they (chains) become able to form lamellar crystals.

Therefore, it would have been obvious to one ordinary of skill in the art at the time of the invention to use composition of Jialanella wherein polymer has long chain branching with length higher than 40 carbon atoms per teaching of Kokko, in order to increase overall crystallinity and probability for heterocrystallization with other polymers in composition.

4. Claims 46 – 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) as applied to claims 13 – 29, 34-37, 44-45 and 49 above and in view of Eastman publication ( EP) " Epolene E-20 Wax – Extrusion lubricant for Fractional Melt High-Density Polyethylene (HDPE)", pages 1-4, September 1999.

As it was discussed above Jialanella discloses composition, wherein low molecular component ( wax) has density at least about 0.925 g/cc or higher as most preferable, but not explicitly discloses waxes with density above 0.950 g/cc ( see lines

54-60, column 13) and pointing out that wax should have high melting point, preferably  $10^{\circ}\text{C}$  and even more preferably  $30^{\circ}\text{C}$  than a polymer (see lines 18 – 25, column 13).

EP publication discloses composition of HDPE with low molecular weight polyethylene wax, wherein wax (see EP : “Epolene E-20”, incorporated herein as a reference) has degree of polymerization low than 200, based on  $M_n$  value of 1600 and density 0.96 g/cc, which indicates high degree of crystallinity and softening point above  $110^{\circ}\text{C}$ .

Therefore, it would have been obvious to one ordinary of skill in the art at the time of the invention to substitute wax in composition discloses by Jialanella for Epolene E-20 or to wax with even higher melting point in order to increase working temperature range of the composition.

### ***Response to Arguments***

Applicant's arguments filed on September 20, 2007 have been fully considered but they are not persuasive.

All Applicant's arguments based on statement that Jialanella does not disclose first polymer with crystallisable sequences A, having degree of polymerization more than 20 and second polymer, made with same monomer, with degree of polymerization less than 500 – those arguments are not persuasive, because:

as it was stated in rejection, Jialanella discloses a linear or substantially linear low density polyethylene and a wax, including low molecular weight polyethylene wax (see abstract, lines 10 – 35, column 3 and line 20 – 60, column 13) – both polymers made

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from same monomer, second polymer( wax) has degree of polymerization less than 500 and first polymer has density more than 0.9 g/cc – this indicate presence of crystals.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gennadiy Mesh whose telephone number is (571) 272 2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gennadiy Mesh  
Examiner  
Art Unit 1711

GM



James J. Seldleek  
Supervisory Patent Examiner  
Technology Center 1700